

AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions, listings, of claims in the application:

Claim 1 (currently amended): An instrument comprising:

- (a) an enclosure having an opening through which a fluid can flow;
- (b) first and second differential pressure switches; and
- (c) a sealed chamber in said opening, said chamber having only one inlet, an outlet and only one path between said only one inlet and said outlet through which said fluid can flow and comprising:
 - (i) first and second restrictors through which said fluid can flow ~~in its entirety~~; and
 - (ii) means for transferring the pressure in said sealed chamber to said first and second differential pressure switches, the pressure in said enclosure to said first switch and the pressure at said sealed chamber outlet to said second switch.

Claim 2 (original): The instrument of claim 1 wherein said first and second differential pressure switches are inside said enclosure.

Claim 3 (original): The instrument of claim 1 wherein said means for transferring said pressure in said sealed chamber to said differential pressure switches is a tube.

Claim 4 (original): The instrument of claim 1 wherein said means for transferring said pressure is a first tube for transferring said pressure in said chamber to switches, a second tube for transferring said enclosure pressure to said first switch and a third tube for transferring said sealed chamber outlet pressure to said second switch.

Claim 5 (original): The instrument of claim 3 wherein said first and second differential pressure switches are inside said enclosure and said means for transferring said pressure is a first tube for transferring said pressure in said chamber to

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said switches, a second tube for transferring said enclosure pressure to said first switch and a third tube for transferring sealed chamber outlet pressure to said second switch.

Claim 6 (previously amended): The instrument of claim 1 wherein said first and second differential pressure switches are connected in series.

Claim 7 (original): The instrument of claim 1 wherein said sealed chamber outlet is threaded for attachment to an outlet pipe.

Claim 8 (original): The instrument of claim 1 wherein said sealed chamber outlet vents to atmosphere and said sealed chamber outlet pressure is the pressure of said atmosphere.

Claim 9 (original): The instrument of claim 1 wherein each of said first and second differential pressure switches have a predetermined actuation pressure and each of said first and second restrictors have a resistance to flow selected so that the pressure drop across said first restrictor for a given rate of fluid flow through said first restrictor matches the predetermined actuation pressure of said first switch and the pressure drop across said second restrictor for a given rate of fluid flow through said second restrictor matches the predetermined actuation pressure of said second switch.

Claim 10 (original): The instrument of claim 1 wherein each of said first and second differential pressure switches have a settable actuation pressure and said first pressure switch settable actuation pressure is set to match the pressure drop through said first restrictor for a given rate of fluid flow through said first restrictor and said second pressure switch settable actuation pressure is set to match the pressure drop through said second restrictor for a given rate of fluid flow through said second restrictor.

Claim 11 (currently amended): A flow sensor for use in an instrument comprising:

- (a) first and second differential pressure switches;
- (b) a sealed chamber comprising:

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- (i) ~~an~~ only one inlet and an outlet through which a fluid ~~can must~~ flow ~~in its entirety,~~ said chamber having only one path between said only one inlet and said outlet;
- (ii) a flow restrictor in said only one inlet and a flow restrictor in said outlet; and
- (iii) means for transferring the pressure in said sealed chamber to said first and second differential pressure switches.

Claim 12 (original): The flow sensor of claim 11 further comprising means for transferring the pressure in an enclosure of said instrument when said flow sensor is inserted in said enclosure to said first switch and means for transferring the pressure at said sealed chamber outlet to said second switch.

Claim 13 (original): The flow sensor of claim 12 wherein all of said means for transferring pressure are tubes.

Claim 14 (original): The flow sensor of claim 11 wherein said first and second differential pressure switches are connected in series.

Claim 15 (original): The flow sensor of claim 11 wherein said sealed chamber outlet is threaded for attachment to an outlet pipe.

Claim 16 (currently amended): A flow sensor for use in an instrument comprising:

a sealed chamber comprising:

- (i) ~~an~~ only one inlet, ~~and an outlet through which a fluid must flow in its entirety,~~ and only one path between said only one inlet and said outlet through which said fluid can flow;
- (ii) a flow restrictor in said only one inlet and a flow restrictor in said outlet; and
- (iii) means for transferring the pressure in said sealed chamber to first and second differential pressure switches.

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Claim 17 (original): The flow sensor of claim 16 wherein said sealed chamber outlet is threaded for attachment to an outlet pipe.

Claim 18 (original): The flow sensor of claim 16 further comprising first and second differential pressure switches.

Claim 19 (currently amended): In combination:

(A) an instrument comprising an enclosure having an opening through which a fluid can flow;

(B) a flow sensor comprising:

(i) first and second differential pressure switches;
and

(ii) a sealed chamber in said opening, said chamber having only one inlet, an outlet and only one path between said only one inlet and said outlet through which said fluid can flow and comprising:

(a) first and second restrictors through which said fluid can ~~must~~ flow ~~in its entirety~~; and

(b) means for transferring the pressure in said sealed chamber to said first and second differential pressure switches, the pressure in said enclosure to said first switch and the pressure at said sealed chamber outlet to said second switch.

Claim 20 (original): The combination of claim 19 wherein said instrument is an analytical instrument.

Claim 21 (original): The combination of claim 19 wherein said first and second differential pressure switches are connected in series.

Claim 22 (original): The combination of claim 19 wherein said sealed chamber outlet is threaded for attachment to an outlet pipe.

Claim 23 (original): The combination of claim 19 wherein said sealed chamber outlet vents to atmosphere and said sealed chamber outlet pressure is the pressure of said

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atmosphere.

Claim 24 (original): The combination of claim 19 wherein each of said first and second differential pressure switches have a predetermined actuation pressure and each of said first and second restrictors have a resistance to flow selected so that the pressure drop across said first restrictor for a given rate of fluid flow through said first restrictor matches the predetermined actuation pressure of said first switch and the pressure drop across said second restrictor for a given rate of fluid flow through said second restrictor matches the predetermined actuation pressure of said second switch.

Claim 25 (original): The combination of claim 19 wherein each of said first and second differential pressure switches have a settable actuation pressure and said first pressure switch settable actuation pressure is set to match the pressure drop through said first restrictor for a given rate of fluid flow through said first restrictor and said second pressure switch settable actuation pressure is set to match the pressure drop through said second restrictor for a given rate of fluid flow through said second restrictor.

Claim 26 (currently amended): An instrument comprising:

(a) an enclosure having an opening through which a fluid can flow;

(b) a first pressure transducer in said enclosure and a second pressure transducer outside of said enclosure;

(c) a sealed chamber in said opening, said chamber having only one inlet, an outlet and only one path between said only one inlet and said outlet through which said fluid can flow and comprising:

(i) first and second flow restrictors through which said fluid can ~~must~~ flow ~~in its entirety~~;

(ii) means for transferring the pressure in said sealed chamber to said first and second pressure transducers; and

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(d) means connected to said first and second pressure transducers for calculating for any given rate of flow of said fluid through said sealed chamber the flow through said outlet.

Claim 27 (original): The instrument of claim 26 wherein said means for transferring said sealed chamber pressure to said first and second pressure transducers is a tube.

Claim 28 (currently amended): A method for detecting the flow of a fluid through an enclosure having an outlet device through which said fluid can flow, said outlet device having a sealed chamber with only one inlet, an outlet, only one path between said only one inlet and said outlet through which said fluid can flow and a flow restrictor in said only one inlet and a flow restrictor in said outlet ~~first and second restrictors~~ through which said fluid can ~~must~~ flow ~~in its entirety~~, said method comprising:

transferring the pressure in said sealed chamber to first and second differential pressure switches;

transferring the pressure in said enclosure to said first switch; and

transferring the pressure outside of said enclosure to said second switch.

Claim 29 (currently amended): A method for detecting a blockage in the outlet of a purged enclosure having an outlet monitoring device in said outlet, said outlet monitoring device having a sealed chamber with only one inlet, an outlet, only one path between said only one inlet and said outlet and a flow restrictor in said only one inlet and a flow restrictor in said outlet ~~first and second restrictors~~ through which a purging fluid can ~~must~~ flow ~~in its entirety~~, said method comprising:

flowing said purging fluid into said enclosure;

monitoring at a first differential pressure switch the difference in pressure between the pressure in said enclosure and said sealed chamber that results from said purging fluid flow through said first restrictor of said outlet device;

monitoring at a second differential pressure switch the

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difference in pressure between said sealed chamber pressure and the pressure outside of said enclosure that results from said purging fluid flow through said second restrictor of said outlet device; and

determining that either said first or second restrictors are blocked when said second or said first switches, respectively, are open when said purging fluid flows.

Claim 30 (previously presented): The method of claim 29 further comprising determining that said purging fluid flow is passing through said outlet device and not leaking out of said enclosure in another location if both of said differential pressure switches are closed.